CLAIMS

What is claimed is:

1.   An apparatus to detect a location of a pickup in an optical disc, comprising:

a pickup reading or writing a signal from or to the optical disc;

a spindle motor rotating the optical disc; and

a controller measuring a rotational speed of the spindle motor to detect a current location of the pickup in the optical disc, wherein the pickup is determined to be located in an area of more than 90 minutes of the optical disc based on ATIP information recorded on the optical disc.

2.   The apparatus of claim 1, further comprising:

a motor controller delaying the measuring of the rotational speed of the spindle motor at the current location of the pickup until the rotational speed reaches a desired rotational speed, wherein a distance of a movement of the pickup exceeds a predetermined track number before the measurement of the rotational speed.

3.   The apparatus of claim 1, wherein the controller comprises:

a memory storing reference rotational speeds of the spindle motor for different areas of the optical disc;

a comparator comparing the rotational speed of the spindle motor at the current location of the pickup with the reference rotational speeds and outputting a comparison result indicative thereof; and

a location determination unit determining whether the pickup is present in a lead-in area when a current rotational speed is faster than the reference rotational speed at an inner area of the optical disc and determines whether the pickup is present in another area other than the lead-in area when the current rotational speed is slower than the reference rotational speed in an outer area based on the comparison result.

4.   The apparatus of claim 3, wherein the location determination unit determines an error when the pickup is not present in the lead-in area, a program area, or a lead-out area.

5.   A method to detect a location of a pickup in an optical disc, wherein the

10

optical disc is rotated using a spindle motor, comprising:

measuring a rotational speed of the spindle motor at the current location of the pickup when the pickup is determined to be present in an area of more than 90 minutes of the optical disc from ATIP information;

determining that the pickup is present in a lead-in area when the rotational speed of the spindle motor is faster than a reference rotational speed in an inner area of the optical disc; and

determining that the pickup is present in an area other than the lead-in area when the rotational speed of the spindle motor is slower than the reference rotational speed at an outer area of the optical disc.

6. The method of claim 5, further comprising:

delaying the measuring of the rotational speed of the spindle motor until the rotational speed reaches a desired rotational speed, wherein a distance of a movement of the pickup exceeds a predetermined track number before the measurement.

7. The method of claim 5, wherein an error is detected when the pickup is determined not to be present in the lead-in area or in the area other than the lead-in area.

8. A method to detect a location of a pickup for an optical disc rotated using a spindle motor, comprising:

detecting a current position of the pickup using rotational speeds of the disc at a wobble speed factor when recording a signal on the disc, wherein the optical disc stores data more than 90 minutes and repeatedly records location information in different sections thereof.

9. The method of claim 8, wherein the wobble speed factor is a recording speed factor.

10. The method of claim 8, further comprising:

reading an absolute time-code in pre-groove (ATIP) information recorded on tracks of the optical disc at intervals of time using the pickup, wherein the ATIP information comprises a manufacturing company, a maximum recording speed, an optimum power, and an initial position of data the optical disc; and

checking the rotational speed of the spindle motor to determine whether the pickup is located in a lead-in area, a program area, or a lead-out area of the optical disc.

11.   The method of claim 8, further comprising:

determining whether the pickup is located in the lead-in area, the program area, or the lead-out area when the optical disc is controlled to move at a predetermined wobble constant linear velocity (CLV) speed factor and based on whether the rotational speed of the spindle motor in the lead-in area is about double that of the spindle motor in the program area.

12.   The method of claim 11, further comprising:

measuring the rotational speed of the spindle motor when an absolute time-code in pre-groove (ATIP) information at the current position of the pickup is 90 minutes or more; and

checking if the rotational speed of the spindle motor at the current position of the pickup is equivalent to a desired speed obtained when the spindle motor moves at the CLV speed factor.

13.   The method of claim 12, further comprising:

delaying the measurement of the rotational speed of the spindle motor until the rotational speed reaches a desired speed and when a distance of a previous movement of the pickup exceeds a predetermined track number.

14.   The method of claim 13, further comprising:

monitoring whether a speed error and a phase error are maintained at minimum values for predetermined times to determine a stability of the spindle motor.

15.   The method of claim 14, further comprising:

storing reference rotational speed speeds of the spindle motor in the lead-in area, the program area, and the lead-out area of the optical disc according to a speed factor of the optical disc;

comparing the rotational speed of the spindle motor at the current location of the pickup with the reference rotational speeds stored and outputting a comparison result;

determining the pickup to be positioned in the lead-in area when the comparison result indicates that the current rotational speed of the spindle motor exceeds the reference rotational speed at the lead-in area;

determining the pickup to be positioned in the program area or the lead-out area when the comparison result indicates that the current rotational speed of the spindle motor is lower than the reference rotational speed at the lead-out area of the pickup; and

determining an error when the comparison result indicates that the pickup is not currently located in the lead-in area, the program area, or the lead-out area.